

REMARKS

The Official Action of August 5, 2004, and the applied prior art have been carefully reviewed. The claims in the application remain as claims 1-25, these claims defining patentable subject matter whereby such claims should be allowed. Applicants again respectfully request favorable reconsideration and allowance.

Before addressing the rejections presently of record, applicants wish to place on the record a summary of the recent history of the present application. Thus, subsequent to the filing of applicants' Reply of February 17, 2004, and on or about March 24, 2004, undersigned received a telephone call from the examiner in charge who indicated that she would be willing to allow the present application if applicants agreed to incorporate the particle size from claim 2 into claim 1. On or about March 26, 2004, during a second telephone conference with the examiner in charge, the examiner indicated that she had changed her mind and that **no amendment would be necessary**, whereby the claims as pending would be allowed without change. A Notice of Allowance was mailed from the PTO on March 29, 2004.

On the basis of an international search report, applicants then filed on June 14, 2004, an Information

Disclosure Statement (IDS) together with a Request for Continued Examination (RCE). Thereupon, the previous allowance was withdrawn and the outstanding Office Action was mailed on August 5, 2004, with all the claims being rejected, the main claims 1 and 13 being rejected as obvious under Section 103 from a combination of four (4) different citations, and another main claim 25 being rejected as obvious under Section 103 from the same combination of four (4) references together with a fifth reference.

Applicants respectfully note MPEP 1308.01 which states in part as follows (first paragraph):

A claim noted as allowable shall thereafter be rejected only with the approval with the primary examiner. **Great care** should be exercised in authorizing such a rejection. See MPEP Section 706.04. [emphasis added]

MPEP 1308.01 goes on to say that the Technology Center Director should approve such a rejection, and MPEP 706.04 indicates that such a rejection of a previously allowed claim must receive the approval of the primary examiner, and adds:

Great care should be exercised in authorizing such a rejection. [citations omitted; emphasis added]

Any rejection based on a combination of four references is tenuous at best, and a rejection based on a combination of five references is even more tenuous.

While there is a general rule that it matters not how many references are strung together so long as they collectively make obvious the subject matter sought to be patented, there is another general rule that the greater the number of references strung together, the less likely it is that the invention was truly obvious. In the words of Circuit Judge Medina in *Ling- Temco-Vought, Inc. v. Kollsman Instrument Corporation* (2d Cir., 1967) 152 USPQ 446,51:

It is apparent that the more numerous the references..., the less likely it becomes that a person having ordinary skill in the art would have arrived at the result reached by the patent in suit. ...
[citations omitted]

In *Bela Seating Company, Inc. v. Poloron Products, Inc.*, 160 USPQ 646,61, the Court concluded that the stringing together of a plurality of patents in an "attempt to invalidate plaintiff's claims tends in and of itself to negate the position of defendant that the patent in suit is invalid".

Applicants believe, for reasons pointed out below in detail, that the new rejections imposed after previous allowance are entirely unjustified under any circumstances, and certainly under the circumstances of the claims having been previously allowed. Of the four references applied in the four-reference combination, only two (Sato USP '559 and Silbiger GB '171) are new references uncovered via the

International Search Report; these two new citations are also the only new ones applied in the two five-reference combination rejections.

Briefly, applicants fail to see how Sato and Silbiger support the PTO holding of obviousness in view of the fact that the present invention provides a superior product as compared with the prior art (as pointed out below), in that a relatively **large amount of lypophilic material** can be incorporated into the microcapsule while retaining a **high bioavailability**. Furthermore, the present invention is aimed at solving technical issues which are not resolved in all of the prior-art documents, including the newly applied Sato and Silbiger documents.

Briefly, applicants respectfully maintain that it is highly improbable for a person skilled in the art to combine the procedures outlined by Sato, Silbiger, Lim, Francois, Kantor and Patel and come up with a novel procedure, characterized by three coating layers and an extremely small particle-size. In this regard, please note applicants' specification at page 5, lines 22-24 as follows:

The processing of the lypophilic compound with a surface active agent (surfactant) creates a coating of the surfactant around the particles of the lypophilic compound, i.e. a primary protective layer.

And, at the bottom of page 5 and the top of page 6:

Thus, upon contact of the drops with the Ca^{2+} solution, beadlets of lypophilic-compound-containing alginate is formed. This creates a second protective layer for the lypophilic compound.

Then, a third coating is applied as described in applicants' specification at about the middle of page 6. The concept of providing three coating layers is simply totally absent in the prior art.

None of the prior art documents teaches three coatings or that a high lypophilic content could be achieved, and therefore a person skilled in the art would have no motivation to combine the teachings of four, five or six prior art documents, as he would be in no position to foresee the improved features of the product, namely superior bioavailability and stability, and significantly increased active ingredient content.

Claims 1-4, 6, 8-11, 13, 14 and 20-22 have been rejected as obvious under Section 103 from Sato in view of Silbiger and previously cited Kantor and Patel. This is four-reference combination rejection is respectfully traversed.

The rejection alleges that Sato discloses a method of making a microencapsulated composition, and that claims 1, 4 and 6 differ from the reference in the following steps:

(a) The step of adding dropwise the 2nd composition to a solution containing calcium, to obtain beadlets. This step is said to be disclosed by Silbiger.

(b) The step of rinsing the beadlets. This step is said to be disclosed by Kantor.

(c) The step of drying the beadlets. This step is said to be disclosed by Patel.

Applicants do not agree: even after combining the teachings of Sato, Silbiger and Patel, the unique three-layered product of the present invention could not have been attained in this manner. Furthermore, the high lypophilic content characteristic of the present invention is not suggested in any of the prior art references.

Moreover, applicants further do not agree that the proposed combination of four references would have been obvious to the person of ordinary skill in the art at the time the present invention was made, i.e. without access to the teachings of applicants' own specification. There is no motive or incentive for the person of ordinary skill in the art to have selected only the minor features from the three subsidiary references, and those minor features only, while ignoring the main features of those citations, and to have then modified Sato by the use of such minor features from three subsidiary citations. There would have been no

reasonable expectation of achieving anything in particular for doing so, and certainly there would have been no reasonable expectation of achieving applicants' results. Indeed, all the incentives would have been **away from** combining the references as proposed, because adding additional steps would have been expected to merely increase the complexity and therefore the resultant costs of the process and the product produced therefrom, without any substantial perceived benefit.

Regarding claims 2, 3 and 15-18, please note that the particle size range disclosed in Sato is so wide (0.5 to 10,000! microns¹), and in fact quite unsupported in the Examples and in the specification, that it lacks any technical features which would have made it obvious to make micro-capsules not greater than 20 microns, as in the present invention, and attain the present properties of bioavailability and loading capacity.

As regards all the dependent claims included in the rejection, they are patentable for the same reason as the independent claims from which they depend directly or ultimately, as pointed out above, such dependent claims incorporating the subject matter of the independent claims from which they depend.

¹ Sato provides no guidance to one skilled in the art in this regard. Such a huge range is equivalent to effectively saying that the particle size range may be anything, and is simply a meaningless global statement.

Claim 12 has been rejected as obvious under Section 103 from Sato in view of Silbiger, Kantor and Patel, and further in view of Francois et al USP 6,555,544 (Francois). This five-reference combination rejection is respectfully traversed.

Claim 12 is patentable for the same reasons as claim 1 from which it depends, it being noted that Francois does not make up for the deficiencies of the four-reference combination as pointed out above, and has not been cited for that purpose.

Withdrawal of the rejection is in order and is respectfully requested.

Claims 5, 7, 19 and 23-25 have been rejected under Section 103 as obvious from "the above combined references as applied to the above claims, and further in view of Lim et al" USP 4,389,419 (Lim). This rejection is respectfully traversed.

First, the rejection is ambiguous. Is it intended to be based on Sato in view of Silbiger, Kantor, Patel and Lim (a five-reference combination), or Sato in view of Silbiger, Kantor, Patel, **Francois** and Lim (a six-reference combination)? Regardless, applicants' claims would not have been obvious from either of those combinations of references, even if those combinations were obvious. Lim has not been cited to make up

for the deficiencies pointed out above, and indeed does not do so.

As claims 5, 7, 19 and 23-25 define non-obvious subject matter for the reasons pointed out above, even considering Lim along with the other citations, the rejection should be withdrawn, and such is respectfully requested.

Applicants wish to respectfully repeat that the present invention results in a superior product as compared with the prior art, in that a relatively large amount of lipophilic material can be incorporated into the microcapsule while retaining a high bioavailability (see specification page 3, lines 19-25; page 4, lines 9-12 and lines 23-28). The present invention involves a unique and non-obvious microencapsulation process, comprising the following steps:

- (1) size reduction of the oily substance, in the presence of a surfactant (1st coating layer - by surfactant);
- (2) preparing a metal alginate solution and combining it with the solution of step 1;
- (3) dropwise addition of the solution of step 3 into a Ca^{+2} solution (2nd coating layer - by alginate);
- (4) rinsing the beadlets in an acid solution and drying; and

(5) coating the beadlets with e.g. cellulose to obtain the microcapsule (3rd coating layer - e.g. by cellulose).

As pointed out in applicants' specification at page 4, lines 28 et seq, it would have been expected that a plurality of coating layers would adversely affect the bioavailability of the encapsulated compounds, but surprisingly this turns out to be not so. This is highly surprising, i.e. the antithesis of obviousness, and constitutes a further unobvious aspect of the present invention.

Claim 25 has been amended above to correct a clerical error. No change in scope is intended.

Applicants believe that all issues have been addressed and resolved above. Accordingly, applicants respectfully request favorable reconsideration and allowance.

Respectfully submitted,

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